Volunteer Lake Assessment Program Individual Lake Reports

COLD POND, ANDOVER, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	738	**Max. Depth (m):**	5.5	**Flushing Rate (yr^{-1}):**	10.7
Surface Area (Ac.):	15	**Mean Depth (m):**	2.4	**P Retention Coef:**	0.45
Shore Length (m):	1,000	**Volume (m^3):**	141,500	**Elevation (ft):**	1081

TROPHIC CLASSIFICATION

Year	Trophic class
1993	OLIGOTROPHIC

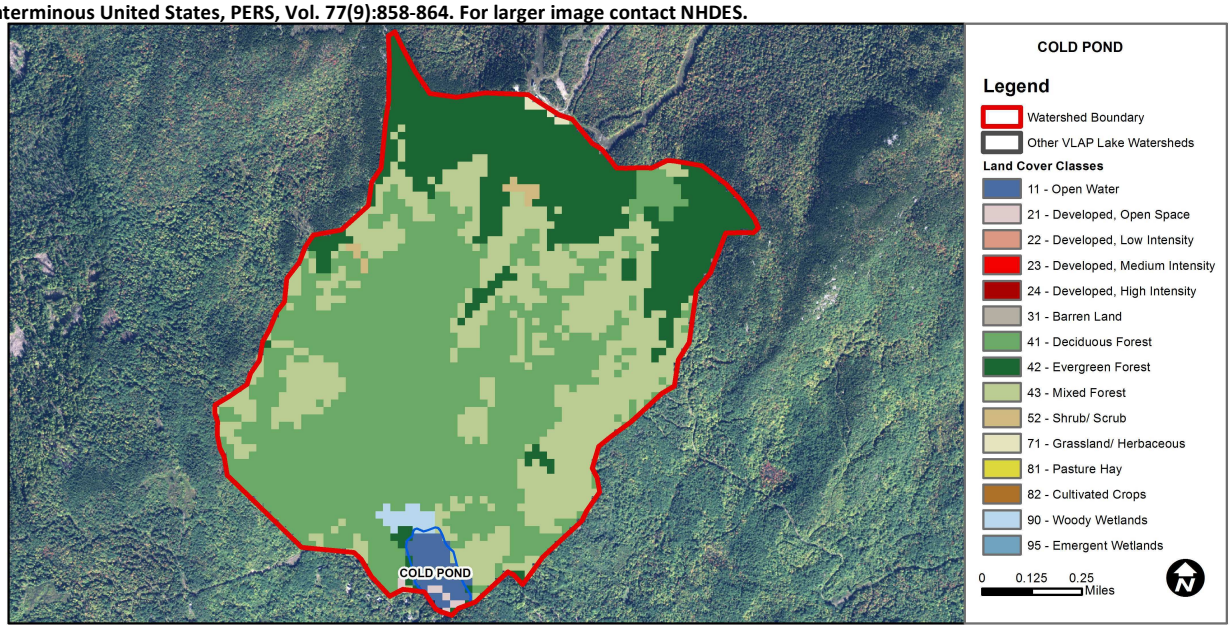
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Very Good	>5 samples and median is < 1/2 threshold.
Primary Contact Recreation	E. coli	Good	Geometric means < criteria; however at least 1 exceedance of the single sample criteria occurred.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	1.72	Barren Land	0	Grassland/Herbaceous	0.23
Developed-Open Space	0.26	Deciduous Forest	47.66	Pasture Hay	0
Developed-Low Intensity	0	Evergreen Forest	21.68	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	27.02	Woody Wetlands	0.71
Developed-High Intensity	0	Shrub-Scrub	0.45	Emergent Wetlands	0

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
COLE POND, ANDOVER, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **CHLOROPHYLL-A:** Chlorophyll levels were not measured in 2013. Historical trend analysis of chlorophyll from 1994 – 2012 indicates highly variable chlorophyll levels between years.
- **CONDUCTIVITY/CHLORIDE:** Conductivity levels were very low at all stations. Historical trend analysis of epilimnetic (deep spot; upper water layer) conductivity from 1994 – 2012 indicates significantly decreasing (improving) conductivity.
- **E. COLI:** E. coli levels were very low and much less than state standards for public beaches and surface waters.
- **TOTAL PHOSPHORUS:** Phosphorus levels were low at all stations.
- **TRANSPARENCY:** Pond transparency was excellent and the Secchi disk was visible on the pond bottom. Historical trend analysis indicates relatively stable transparency with moderate variability between years.
- **TURBIDITY:** Turbidity was low at each station.
- **PH:** pH levels were less than desirable range 6.5 – 8.0 at all stations. Historical trend analysis of epilimnetic pH from 1994-2012 indicates highly variable pH between years.
- **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer, typically June, July and August, to better assess seasonal and historical trends and reduce data variability. If sampling only once per summer, please sample with a biologist to maintain consistency.

Table 1. 2013 Average Water Quality Data for COLE POND

Station	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m	Turb. ntu	pH
				NVS		
2nd Inlet	16.05		8		0.92	5.44
Cole Pondbeach		20				
Dam Outlet	14.53		3		0.28	5.53
Hypolimnion	14.59		6	4.00	0.54	5.10
Main Inlet	14.16		3		0.16	5.04

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable ('94-'12)	Trend not significant; data highly variable.	Chlorophyll-a	Stable ('94-'12)	Trend not significant; data highly variable.
Conductivity	Improving ('94-'12)	Data significantly decreasing.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary.